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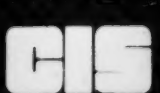

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SENATE

REPORT
101-53

FUEL CELLS ENERGY UTILIZATION ACT OF 1989

JUNE 15 (legislative day, JANUARY 3), 1989.—Ordered to be printed

Mr. JOHNSTON, from the Committee on Energy and Natural Resources, submitted the following

REPORT

[To accompany S. 634]

The Committee on Energy and Natural Resources, to which was referred the bill (S. 634) to develop a national policy for the utilization of fuel cell technology, having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

PURPOSE OF MEASURE

The purpose of the bill, as reported by the Committee on Energy and Natural Resources, is to develop a national policy for the utilization of fuel cell technology.

SUMMARY OF MAJOR PROVISIONS

S. 634 as reported by the Committee on Energy and Natural Resources contains the following major provisions:

(1) Section 256 of the Energy Policy and Conservation Act (EPCA) is amended to include industries using fuel cell technologies under the term "domestic renewable energy industry". Section 256 of EPCA requires the Secretary of Commerce and the Secretary of Energy to conduct certain activities aimed at enhancing commerce in the domestic renewable energy industry.

(2) The Administrator of the Environmental Protection Agency is directed to prepare Federal guidelines for cities and municipalities specifying environmental and safety standards for the use of fuel cell technologies.

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(3) The Secretary of Commerce is directed to assess and report to Congress within 180 days of enactment regarding the export potential for integrated systems of fuel cells with renewable power technologies.

Background and Need

The fuel cell, an electric-chemical device first constructed by Sir William Grove in 1839, had its first practical application in the Gemini V flight of August 1965, where it proved to be an efficient, reliable power generator with very high-energy density. Fuel cells operate by combining hydrogen-rich gas with air and coverting the chemical energy directly into electricity without any intermediate combustion step. This contributes to its high efficiency rate of 40 to 60 percent. In addition, the heat generated is sufficient to permit cogeneration space heating, for an overall efficiency rate as high as 80 percent. A typical cell produces high, direct current in a low voltage. Practical voltages are obtained by connecting many individual cells into what is referred to as a cell stack.

Besides their high efficiencies, fuel cells offer a number of other advantages, including economy and size. They can be factory assembled, leading to short construction lead times and put on line in relatively short periods of time. The capital outlay and interest costs for fuel cell technologies are expected to compare favorably with other power generation technologies. In addition, their modular design means that output can be increased incrementally, which allows for a closer match between capacity and anticipated demand growth. Hence this technology holds promise for both centralized and decentralized power systems, including hybrid applications with renewable systems.

The goal of Federal research in fuel cells since the mid-1970's has been to develop a highly energy efficient technology with especially desirable characteristics for electric power production. These characteristics include high performance, fuel flexibility, low environmental impact, small size and spinning reserve capability. The primary national gains expected from this research are increased fuel use efficiency, substitution of alternate fuels for conventional fuels, and the potential for improving our national balance of trade through the export of fuel cell technology.

Federal investment in fuel cell technology research and development since 1975 has been approximately $300 million. This research and development program has been built largely upon Congressional initiatives. The point of commercial payoff for this large investment appears to be fast approaching, but a strategy and policy for acting upon the research findings has not yet been implemented. This bill is aimed at achieving such a policy change.

It is intended that by requiring Federal agencies to specifically recognize this technology through existing information channels, the Congress will be expediting the acceptance of fuel cells into the commercial market worldwide.

Legislative History

S. 634 was introduced by Senator Matsunaga for himself, and Senators Murkowski, Bingaman, Inouye, Wirth, Pell, and Lieber-

man. Senator Sanford was added as a co-sponsor on April 11, 1989. The bill was referred to the Committee. No hearings were held in the 101st Congress on this measure. However, on September 23, 1987, the Subcommittee on Energy Research and Development held a legislative hearing on a similar measure (S. 1295). S. 1295 was reported formally by the Committee on August 5, 1988 (S. Rpt. 100–458) and approved by the Senate on August 8, 1988.

Committee Recommendation and Tabulation of Votes

The Committee met in open business to consider S. 634 on June 7, 1989. The Committee, with a quorum present, recommended that the Senate pass S. 634. The roll call vote on the reporting of the measure was 18–0.

YEAS	NAYS
Mr. Johnston	
Mr. Bumpers*	
Mr. Ford	
Mr. Bradley	
Mr. Bingaman*	
Mr. Wirth*	
Mr. Conrad	
Mr. Heflin	
Mr. Rockfeller	
Mr. McClure	
Mr. Hatfield	
Mr. Domenici	
Mr. Wallop	
Mr. Murkowski	
Mr. Nickles	
Mr. Burns	
Mr. Garn*	
Mr. McConnell	

*Indicates vote by proxy.

Section-by-Section Analysis

Section 3 amends section 256 of the Energy Policy and Conservation Act (EPCA) to include fuel cell technology as a "domestic renewable energy industry" for the purposes of that Act. Section 256 of EPCA requires the Secretary of Commerce and the Secretary of Energy to coordinate activities aimed at enhancing commerce in renewable energy technologies.

Section 4 directs the Administrator of the Environmental Protection Agency (EPA) to prepare federal guidelines for cities and municipalities specifying environmental and safety standards for the use of fuel cell technologies.

Section 5 requires the Secretary of Commerce to assess and report to Congress concerning the export market potential for fuel cells integrated with renewable energy technologies.

Cost and Budgetary Considerations

U.S. Congress,
Congressional Budget Office,
Washington, DC, June 12, 1989.

Hon. J. Bennett Johnston, Jr.,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.

Dear Mr. Chairman: The Congressional Budget Office has reviewed S. 634, the Fuel Cells Energy Utilization Act of 1989, as ordered reported by the Senate Committee on Energy and Natural Resources, June 7, 1989. CBO estimates that enacting S. 634 would increase federal outlays by $1.5 million to $2 million in fiscal year 1990, assuming appropriation of the necessary sums. The bill would not result in any significant costs after 1990.

S. 634 would amend the Energy Policy and Conservation Act to include fuel cells as a "domestic renewable energy industry" for the purposes of creating new international markets for domestic technologies. In addition, the bill would:

Direct the Secretary of Commerce to assess and report to the Congress concerning the export market potential for integrated systems of fuel cells with renewable power technologies, and

Direct the Administrator of the Environmental Protection Agency (EPA) to prepare environmental and safety guidelines for the use of fuel cells.

Based on information provided by the Department of Commerce and EPA, CBO estimates that preparation of the studies, reports, and guidelines required by S. 634 would cost $1 million to $2 million in fiscal year 1990.

The bill would not have any effect on the budgets of state or local government.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Peter Fontaine, who can be reached at 226–2860.

Sincerely,

Robert D. Reischauer.

Regulatory Impact Evaluation

In compliance with paragraph 11(b) of Rule XXVI of the Standing Rule of the Senate, the Committee makes the following evaluation of the regulatory impact which would be incurred in carrying out S. 634 as reported.

Sections 3 and 5 of the bill would require the Secretary of Commerce to report to the Congress with an assessment of potential for export and the identification of any barriers to the export of this technology. The inclusion of fuel cells in the ongoing evaluation of domestic renewable energy and related service industries would result in a minimal increase in administrative costs to the Department.

Section 4 of the bill would increase regulatory authority of the Environmental Protection Agency (EPA) to set environmental and safety standards on fuel cell technology. So far, the development of fuel cell technology has placed major emphasis on the technical

and environmental factors. Any new EPA environmental regulations and safety standards could have a strong impact on the direction of future developments.

No personal information would be collected in administering the program, and there would be no impact on personal privacy from S. 634.

Executive Communications

The Administration views are not available at this time.

Changes in Existing Law

In compliance with paragraph 12 of Rule XXVI of the Standing Rules of the Senate, the Committee notes the following changes in existing law made by the bill as reported (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, and existing law in which no change is proposed is shown in roman):

Energy Policy and Conservation Act

Public Law 94-163, as Amended

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DOMESTIC RENEWABLE ENERGY INDUSTRY AND RELATED SERVICE INDUSTRIES

Sec. 256. (a) It is the purpose of this section to implement the responsibilities of the United States under chapter VII of the international energy program with respect to development of alternative energy by facilitating the overall abilities of the domestic renewable energy industry and related service industries to create new markets.

(b)(1) Before the later of—

(A) 6 months after the date of the enactment of this section, and

(B) May 31, 1985, the Secretary of Commerce shall conduct an evaluation regarding the domestic renewable energy industry and related service industries and submit a report of his findings to the Congress.

(2) Such evaluation shall include—

(A) an assessment of the technical and commercial status of the domestic renewable energy industry and related service industries in domestic and foreign markets;

(B) an assessment of the Federal Government's activities affecting commerce in the domestic renewable energy industry and related service industries and in consolidating and coordinating such activities within the Federal Government; and

(C) an assessment of the aspects of the domestic renewable energy industry and related service industries in which improvements must be made to increase the international commercialization of such industry.

(c)(1) On the basis of the evaluation under subsection (b), the Secretary of Commerce shall, consistent with existing law, establish a

program for enhancing commerce in renewable energy technologies and consolidating or coordinating existing activities for such purpose.

(2) Such program shall provide for—

(A) the broadening of the participation by the domestic renewable energy industry and related industries in such activities.

(B) the promotion of the domestic renewable energy industry and related service industries on a worldwide basis;

(C) the participation by the Federal Government and the domestic renewable energy industry and related service industries in international standard-setting activities; and

(D) the establishment of an information program under which—

(i) technical information about the domestic renewable energy industry and related service industries shall be provided to appropriate public and private officials engaged in commerce, and

(ii) marketing information about export opportunities shall be available to the domestic renewable energy industry and related service industries.

(3) Necessary funds required for carrying out such program shall be requested in connection with fiscal years beginning after September 30, 1984.

(d) There shall be established an interagency working group which, in consultation with the representative industry groups and relevant agency heads, shall make recommendations to coordinate the actions and programs of the Federal Government affecting commerce in renewable energy products and related services. The Secretary of Energy shall be the chairman of such group. The heads of appropriate agencies may detail such personnel and may furnish such services to such working group, with or without reimbursement, as may be necessary to carry out its functions.

(e) For purposes of this section, the term "domestic renewable energy industry" shall include industries using fuel cell technology.

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